2 Product Specifications

2-1 Specifications

Item	Description	
	Analog	Digital
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally white transmissive, 15-Inch viewable, 0.297 pixel pitch	
Scanning Frequency	Horizontal : 30 kHz ~ 61 kHz (Automatic) Vertical : 56 Hz ~ 75 Hz	
Display Colors	16,2 Million colors	
Maximum Resolution	Horizontal : 1024 Pixels @ 60 kHz Vertical : 768 Pixels @ 75 Hz	
Input Video Signal	Analog, 0.7 Vp-p ± 5% positive at 75 Ω, internally terminated	TMDS
Input Sync Signal	Type : Seperate H/V sync., In case of using option cable, Composite, Automatic Synchronization without external switch Level : TTL level (V high ≥ 2.0 V, V low ≤ 0.8 V)	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	304.1 ± 3 mm 228.1 ± 3 mm	
AC power voltage & Frequency	AC 90 ~ 264 Volts, 60/50 Hz ± 3 Hz	
Power Consumption	31 W (max), 28 W (normal)	
Dimensions Unit (W x D x H) Carton (W x D x H)	 357.5 x 184.5 x 360.6 mm (14.1 x 7.3 x 14.2 inches) 440 x 363 x 145 mm (17.3 x 14.3 x 5.7 inches)	
Weight (Net/Gross) Normal stand Multi stand	 2.9 kg (6.4 lbs) / 4.6 kg (10.1 lbs) 2.98 kg (6.6 lbs) / 4.68 kg (10.3 lbs)	
Environmental Considerations	Operating Temperature : 41°F ~ 95°F (5°C ~ 35°C) Humidity : 10 % ~ 80 % Storage Temperature : -4°F ~ 113°F (-20°C ~ 45°C) Humidity : 5 % ~ 95 %	

- MO15P* comply with TCO99 recommendations for reduced electromagnetic fields.
- Designs and specifications are subject to change without prior notice.

2-2 Pin Assignments

Sync Type / Pin No.	15-Pin D-Sub Signal Cable Connector		
	Separate	**Composite**	**Sync-on-green**
1	Red video	Red video	Red
2	Green video	Green video	Green video + H/V Sync.
3	Blue video	Blue video	Blue video
4	GND	GND	GND
5	GND (DDC Return)	GND (DDC Return)	GND (DDC Return)
6	Red video GND	Red video GND	Red video GND
7	Green video GND	Green video GND	Green video GND
8	Blue video GND	Blue video GND	Blue video GND
9	No Connection	No Connection	Not Used
10	Sync.-GND/Self Test	Sync.-GND/Self Test	GND-Sync./Self Test
11	GND	GND	GND
12	DDC Data	DDC Data	DDC Data
13	H-Sync.	H/V-Sync.	Not Used
14	V-Sync.	Not Used	Not Used
15	DDC Clock	DDC Clock	DDC Clock

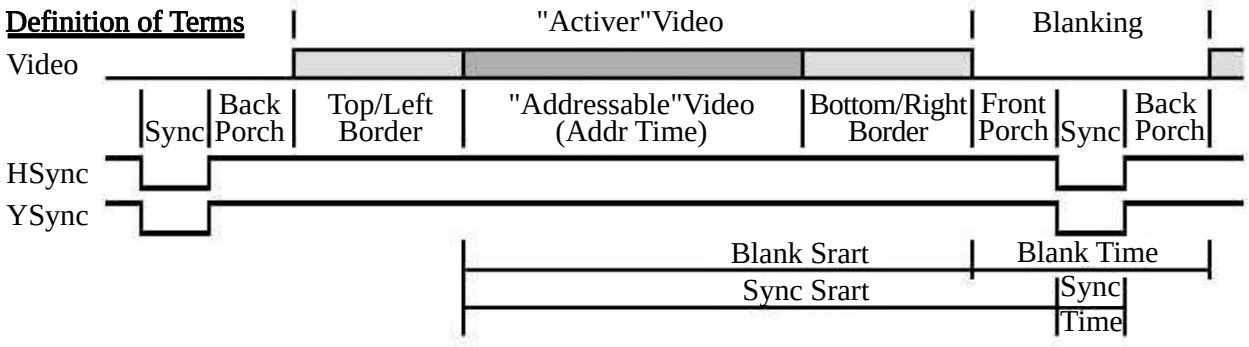
Sync Type / Pin No.	24-Pin DVI-D(TMDS)		
1	Rx2-	13	No Connection
2	Rx2+	14	DDC Power Input (+5V)
3	GND	15	Self Raster
4	No Connection	16	Connection Signal Output (+5V)
5	No Connection	17	Rx0-
6	DDC Clock (SCL)	18	Rx0+
7	DDC Data (SDA)	19	GND
8	No Connection	20	No Connection
9	Rx1-	21	No Connection
10	Rx1+	22	GND
11	GND	23	RxC+
12	No Connection	24	RxC-

2-3 Timing Chart

This section of the service manual describes the timing that the computer industry recognizes as standard for computer-generated video signals.

2-3-1 LCD Panel Mode : 1 mode

Timing No.	15
Originator	VESA
Mode Name	1024/60Hz
Resolution (HxV)	1024x768
HORIZONTAL	
Frequency	48.363kHz
Total time	20.677μs
Active time	15.754μs
Blank time	4.923μs
Border (L / R)	0.000μs
Data time	15.754μs
Front porch	0.369μs
Sync. width	2.092μs
Back porch	2.462μs
Sync. polarity	Negative
VERTICAL	
Frequency	60.004Hz
Total time	16.666ms
Active time	15.880ms
Blank time	0.786ms
Border (T / B)	0.000ms
Data time	15.880ms
Front porch	0.062ms
Sync. width	0.124ms
Back porch	0.600ms
Sync. polarity	Negative
Dot Clock	65.000MHz
Sync. Type	Separate
Scan Type	N/I



2-3-2 Supported Modes (1)

Timing No.	1	2	3	11	17
Originator	IBM	IBM	IBM	VESA	VESA
Mode Name	VGA1	VGA2	VGA3	640/72Hz	640/75Hz
Resolution (HxV)	640x350	720x400	640x480	640x480	640x480
HORIZONTAL					
Frequency	31.469kHz	31.469kHz	31.469kHz	37.861kHz	37.500kHz
Total time	31.778μs	31.777μs	31.778μs	26.413μs	26.667μs
Active time	26.058μs	26.058μs	26.058μs	20.825μs	20.317μs
Blank time	5.720μs	5.720μs	5.720μs	5.588μs	6.350μs
Border (L / R)	0.318μs	0.318μs	0.318μs	0.254μs	0.000μs
Data time	25.422μs	25.422μs	25.422μs	20.317μs	20.317μs
Front porch	0.318μs	0.318μs	0.318μs	0.508μs	0.508μs
Sync. width	3.813μs	3.813μs	3.813μs	1.270μs	2.032μs
Back porch	1.589μs	1.589μs	1.589μs	3.810μs	3.810μs
Sync. polarity	Positiv	Negative	Negative	Negative	Negative
VERTICAL					
Frequency	70.086Hz	70.087Hz	59.940Hz	72.809Hz	75.000Hz
Total time	14.268ms	14.268ms	16.683ms	13.735ms	13.333ms
Active time	11.504ms	13.155ms	15.761ms	13.100ms	12.800ms
Blank time	2.764ms	1.113ms	0.922ms	0.635ms	0.533ms
Border (T / B)	0.191ms	0.222ms	0.254ms	0.211ms	0.000ms
Data time	11.122ms	12.711ms	15.253ms	12.678ms	12.800ms
Front porch	0.985ms	0.191ms	0.064ms	0.026ms	0.027ms
Sync. width	0.064ms	0.064ms	0.064ms	0.079ms	0.080ms
Back porch	1.716ms	0.858ms	0.794ms	0.528ms	0.427ms
Sync. polarity	Negative	Positive	Negative	Negative	Negative
Dot Clock	25.175MHz	28.322MHz	25.175MHz	31.500MHz	31.500MHz
Sync. Type	Separate	Separate	Separate	Separate	Separate
Scan Type	N/I	N/I	N/I	N/I	N/I

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2-3-2 Supported Modes (2)

Timing No.	19
Originator	VESA
Mode Name	1024/75Hz
Resolution (HxV)	1024x768
HORIZONTAL	
Frequency	60.023kHz
Total time	16.660μs
Active time	13.003μs
Blank time	3.657μs
Border (L / R)	0.000μs
Data time	13.003μs
Front porch	0.203μs
Sync. width	1.219μs
Back porch	2.235μs
Sync. polarity	Positive
VERTICAL	
Frequency	75.029Hz
Total time	13.328ms
Active time	12.795ms
Blank time	0.533ms
Border (T / B)	0.000ms
Data time	12.795ms
Front porch	0.017ms
Sync. width	0.050ms
Back porch	0.466ms
Sync. polarity	Positive
Dot Clock	78.750MHz
Sync. Type	Separate
Scan Type*	N/I

2-3-2 Supported Modes (3)

Timing No.	12	13	14	18	16
Originator	VESA	VESA	VESA	VESA	VESA
Mode Name	800/56Hz	800/60Hz	800/72Hz	800/75Hz	1024/70Hz
Resolution (HxV)	800x600	800x600	800x600	800x600	1024x768
HORIZONTAL					
Frequency	35.156kHz	37.879kHz	48.077kHz	46.875kHz	56.476kHz
Total time	28.444µs	26.400µs	20.800µs	21.333µs	17.707µs
Active time	22.222µs	20.000µs	16.000µs	16.162µs	13.653µs
Blank time	6.222µs	6.400µs	4.800µs	5.171µs	4.054µs
Border (L / R)	0.000µs	0.000µs	0.000µs	0.000µs	0.000µs
Data time	22.222µs	20.000µs	16.000µs	16.162µs	13.653µs
Front porch	0.667µs	1.000µs	1.120µs	0.323µs	0.320µs
Sync. width	2.000µs	3.200µs	2.400µs	1.616µs	1.813µs
Back porch	3.556µs	2.200µs	1.280µs	3.232µs	1.920µs
Sync. polarity	Positive or Negative	Positive	Positive	Positive	Negative
VERTICAL					
Frequency	56.250Hz	60.317Hz	72.188Hz	75.000Hz	70.069Hz
Total time	17.778ms	16.579ms	13.853ms	13.333ms	14.272ms
Active time	17.067ms	15.840ms	12.480ms	12.800ms	13.599ms
Blank time	0.711ms	0.739ms	1.373ms	0.533ms	0.673ms
Border (T / B)	0.000ms	0.000ms	0.000ms	0.000ms	0.000ms
Data time	17.067ms	15.840ms	12.480ms	12.800ms	13.599ms
Front porch	0.028ms	0.026ms	0.770ms	0.021ms	0.053ms
Sync. width	0.057ms	0.106ms	0.125ms	0.064ms	0.106ms
Back porch	0.626ms	0.607ms	0.478ms	0.448ms	0.513ms
Sync. polarity	Positive or Negative	Positive	Positive	Positive	Negative
Dot Clock	36.000MHz	40.000MHz	50.000MHz	49.500MHz	75.000MHz
Sync. Type	Separate	Separate	Separate	Separate	Separate
Scan Type*	N/I	N/I	N/I	N/I	N/I